Tennessee Pollution Prevention Partnership Success Story

DENSO Manufacturing Tennessee, Inc.
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Partner Reduces Water Usage

The Member
DENSO Manufacturing Tennessee, Inc., is part of DENSO Corporation's global network of 74 subsidiaries in 29 nations and the fourth largest producer of advanced technology, components and systems for all major automakers. The Tennessee facilities employ more than 2,900 associates at two locations, Maryville and Athens. Automotive components and systems produced at the Tennessee operations include the following:
Maryville: Alternators, starters, instrument clusters, and electronic components
Athens: Oxygen sensors, fuel injectors, air-flow meters, ignition coils, monolithic carriers and spark plugs

The Story – Rinse Water
DENSO's Starter/Alternator Plants coat various metal parts with phosphate prior to stamping. The phosphate coating lubricates the parts, which allows the parts to move through stamping equipment more easily. The Parts Cold Forging (PCF) phosphate line used 7.36 million gallons of water in 2002. The PCF phosphate line used an average of 35,000 gallons of rinse water per day of operation. Fresh water was added to the rinse bath continuously to ensure the parts were properly cleaned. The rinse baths were not monitored for conductivity.

New Idea – Regulate the flow of fresh water by monitoring conductivity.
The solution was to install "Control Stiks" to monitor the conductivity of the rinse water and regulate the flow of fresh water into the rinse bath. The "Control Stiks" will only allow fresh rinse water to be added to the bath when the conductivity reading is out of specifications. The "Control Stiks" cost $885.

The Success
The installation and operation of the "Control Stiks" reduced the PCF phosphate line water usage to 8,000 gallons per day. This equals a 77% reduction in water usage.

The projected annual cost savings from the "Control Stiks" is $31,000.

The Pollution Prevented
This project prevented approximately 6 million gallons of wastewater per year.